United States Environmental Protection Agency

January-February 2019

Freshwater HABs Newsletter

Reauthorization HABHRCA of 2017

On January 7th, 2019 the "*Harmful Algal Bloom and Hypoxia Research and Control Amendments Act of 2017*", was reauthorized as part of the National Integrated Drought Information Systems Act (PL 115-423). The act was amended to, among other things include:

- Coastal/marine waters in the Scientific Assessments of Freshwater HABs and to complete the assessment not less than once every 5 years instead of no later than 24 months;
- Develop and maintain a publicly accessible internet website that provides information as to the HABHRCA Program activities;
- Accelerate the utilization of effective methods of intervention and mitigation to reduce the frequency, severity, and impacts of harmful algal bloom and hypoxia events;
- For NOAA to develop contingency plans for the long-term monitoring of hypoxia; and
- Include a section on Event Response Program and for the appropriate Federal Agency (NOAA for marine and EPA for freshwater) to determine an event of national significance, including the specifics on distribution of costs and donations, and factors for consideration by the appropriate Federal official declaring whether a hypoxia or harmful algal bloom event is an event of national significance.

ITRC's Strategies for Preventing and Managing Harmful Cyanobacterial Blooms (HCBs) Team

Interstate Technology & Regulatory Council (ITRC) has formed a new team called the Strategies for Preventing and Managing Harmful Cyanobacterial Blooms (HCBs) Team. The goal of this project team is to develop a technical and regulatory guidance document as a comprehensive resource for prevention and management of HCBs. The project team will produce fact sheets on the primary steps of prevention and early response, best management practices, and risk communication. The group will also develop tools and training materials to aid regulators in identifying prevention and remediation approaches. For more information contact the team's Program Advisor, Cherri Baysinger, at cbaysinger@socket.net

Great Lakes HABs Collaboratory Webinar on Great Lakes Observing System (GLOS) Recording

On January 23rd the Great Lakes HABs Collaboratory hosted a webinar featuring the Great Lakes Observing System (GLOS). The webinar highlighted GLOS initiatives and provided information on how researchers can share data through GLOS. The recording and slides could be assessed in the Great Lakes HABs Collaboratory website **here**.

UPCOMING EVENTS

29th Annual PA Lake Management Society (PALMS) Conference
March 6-7, 2019
State College, PA

PNWS-AWWA Algal Toxin Workshop
Wednesday, March 13, 2019
8:30 AM to 4:00 PM PDT

11th National Water Monitoring Conference
March 25-29, 2019
Denver, Colorado

3rd Interdisciplinary Freshwater Harmful Algal Blooms Workshop
April 24 - 26, 2019
Toronto, Ontario

11th International Conference on Toxic Cyanobacteria
May 5-10, 2019
Krakow, Poland

IAGLR 2019 Conference
June 10-14, 2019
Brockport, NY

2019 Gordon Research Conference on Mycotoxins and Phycotoxins: Risk and Regulation in a Multi-Toxin Exposure World
June 16-21, 2019
Stonehill College, Easton, MA

10th US HAB Symposium
Nov 3-8, 2019
Perdido Beach Resort,
Orange Beach, Alabama

This newsletter was created by Dr. Lesley D'Anglada, Office of Science and Technology, Office of Water, EPA. Mention of trade names, products, or services does not convey and should not be interpreted as conveying official EPA endorsement, approval or recommendation for use.

NEW *Toxins* Special Issue: *"Freshwater Cyanobacterial Toxins: Developments in Monitoring, Identification, Impacts and Factors Influencing Production"*

This Special Issue aims to bring together papers that provide new information on the monitoring of cyanobacterial toxins and the identification of toxins in freshwater environments. Further, papers are invited that develop our knowledge of how cyanobacterial toxins impact humans, as well as different aquatic and terrestrial organisms. Papers that increase understanding of how toxin production by cyanobacteria is regulated are also welcomed. The deadline for submission is June 30th, 2019.

Requests for Proposals

2019-2020 Great Lakes HABs Collaboratory Request for Proposals

$15,000 of funding will be made available to facilitate collaboration on projects relating to Great Lakes HABs. Projects can range from research focusing on knowledge gaps to outreach products designed to communicate the latest HABs science to a broader audience. To apply, send proposals (1 page or less) to gl.habs.collaboratory@gmail.com by 5:00 P.M. (eastern) on Friday March 22th. For questions regarding the proposal and eligibility, please contact Ken Gibbons (kgibbons@glc.org). For questions regarding eligible content, please contact Silvia Newell (silvia.newell@wright.edu) or Michelle Selzer (SELZERM@michigan.gov).

Training Resources – Marine

Taxonomic Identification of Harmful Algae in U.S. Marine Waters
August 12 - 21, 2019, Bigelow Laboratory for Ocean Sciences Research and Education Campus in East Boothbay, ME. Cost: $2,500

Algal Culturing Course
May 12 - 17, 2019**,** Bigelow Laboratory for Ocean Sciences Research and Education Campus in East Boothbay, ME. Cost: $3,500

Marine Biotoxin Management Training Video
Provides a better understanding of specific biotoxin concepts in the National Shellfish Sanitation Program (NSSP), as described in the *NSSP Guide for the Control of Molluscan Shellfish: 2017 Revision*.

HABs Training Needs Assessment

The community engagement core of the Lake Erie Center for Freshwaters and Human Health is organizing a community engagement training to be held May 20-23, 2019 at the Maumee State Park, OH. The planning team would appreciate input to identify priorities and preferences for training on HABs by filling out this **needs assessment survey**. For questions please contact Heather Triezenberg, Michigan Sea Grant, at vanden64@msu.edu

Useful Resources

- ✓ **CYANOnews Issue 11 (Jan-Feb 2019)**
- ✓ **Phytoplankton Monitoring Network (PMN)**
- ✓ **Modeling Cyanobacteria Movement in Milford Lake, Part II**
- ✓ **American Association of Geographers Annual Meeting: Geographic Research on HABs**

NOTICE: We're in the process of revamping the EPA's Cyanobacteria Website. The website can be assessed using this temporary link. Apologies for the inconvenience, we expect the issue to be resolved soon.

To sign up for the newsletter please send an email to epacyanohabs@epa.gov.
For more information, please visit the USEPA's CyanoHABs Website

BlOOMS, BEACH CLOSURES and HEALTH ADVISORIES * January/February 2019

⚠ Florida (2) ⚠ Oregon (1)

* Include blooms, cautions, warnings, public health advisories, closings and detections over the State's threshold, due to the presence of algae, toxins or both. This is NOT a comprehensive list, and many blooms may have not been reported.

RECENTLY PUBLISHED ARTICLES

Using rapid quantification of adenosine triphosphate (ATP) as an indicator for early detection and treatment of cyanobacterial blooms
Katherine E. Greenstein, Eric C. Wert. Water Research, Volume 154, 2019, Pages 171-179.

Removal of Cyanotoxins by Potassium Permanganate: Incorporating Competition from Natural Water Constituents
Juliana R. Laszakovits, Allison A. MacKay. Water Research, 2019. In Press.

•OH Inactivation of Cyanobacterial Blooms and Degradation of Toxins in Drinking Water Treatment System
Mindong Bai, Qilin Zheng, Wu Zheng, Haiyan Li, Shaoyun Lin, Lingfeng Huang, Zhitao Zhang. Water Research, Volume 154, 2019, Pages 144-152.

A web-based analysis and scenario tool for eutrophication of inland waters for Sweden and Europe
Lena Strömbäcka, Charlotta Persa, Johan Strömqvista, Göran Lindströma, Jens Gustavsson. Environmental Modelling & Software, Volume 111, January 2019, Pages 259-267.

Cyanobacterial blooms act as sink and source of endocrine disruptors in the third largest freshwater lake in China
Yunlu Jia, Qiqing Chen, Sarah E. Crawford, Lirong Song, Wei Chen, Monika Hammers-Wirtz, Tido Strauss, Thomas-Benjamin Seiler, Andreas Schäffer, Henner Hollert. Environmental Pollution, Volume 245, 2019, Pages 408-418.

Space-Time Geostatistical Assessment of Hypoxia in the Northern Gulf of Mexico
Matli, V. Rohith Reddy, Shiqi Fang, Joseph Guinness, Nancy N. Rabalais, J. Kevin Craig, and Daniel R. Obenour. 2018. Environmental Science & Technology 52 (21): 12484–12493.

Biodiversity and dynamics of cyanobacterial communities during blooms in temperate lake (Harsha Lake, Ohio, USA)
Bo Zhu, Huansheng Cao, Gaoyang Li, Wei Du, Guangyu Xu, Jorge Santo Domingo, Haiwei Gu, Ning Xu, Shunshan Duan, Jingrang Lu, Harmful Algae, Volume 82, 2019, Pages 9-18.

Occurrence and diversity of cyanotoxins in Greek lakes
Christophoridis, C., Zervou, S.-K., Manolidi, K., Katsiapi, M., Moustaka-Gouni, M., Kaloudis, T., Triantis, T.M., Hiskia, A. 2018. *Scientific Reports* 8, 17877.

Global anthropogenic phosphorus loads to freshwater and associated grey water footprints and water pollution levels: A high resolution global study
Mekonnen, M. M. and Hoekstra, A. Y. 2018. Water Resources Research, 54, 345–358.

Comparative Analysis of Microcystin Prevalence in Michigan Lakes by Online Concentration LC/MS/MS and ELISA
Birbeck, J.A.; Westrick, J.A.; O'Neill, G.M.; Spies, B.; Szlag, D.C. *Toxins* 2019, *11*, 13.

A Review of Water Quality Responses to Air Temperature and Precipitation Changes 2: Nutrients, Algal Blooms, Sediment, Pathogens
Coffey, R., M.J. Paul, J. Stamp, A. Hamilton, and T. Johnson. 2018. Journal of the American Water Resources Association 1–25.

Evaluation and Optimization of Microcystin Analytical Methods (project 4647)
Mark E. Citriglia, Sheela G. Agrawal, Debmalya Bhattacharyya, Rosemarie A. Read, Deborah C. Schordock, Judy Westrick and Johnna Birbeck. The Water Research Foundation (WRF). 2019. ISBN: 978-1-60573-395-1